

Product no **AS10 939****PsaC | PSI-C core subunit of photosystem I****Product information**

**Immunogen** | KLH-conjugated synthetic peptide conserved in all known PsaC proteins including *Arabidopsis thaliana* UniProt: [P62090](#) TAIR: [AtCg01060](#), *Hordeum vulgare* UniProt: [P69416](#), *Oryza sativa* UniProt: [P0C360](#), *Chlamydomonas reinhardtii* UniProt: [Q00914](#), *Synechococcus elongatus* UniProt: [Q31QV2](#)

**Host** | Rabbit

**Clonality** | Polyclonal

**Purity** | Serum

**Format** | Lyophilized

**Quantity** | 50 µl

**Reconstitution** | For reconstitution add 50 µl of sterile water

**Storage** | Store lyophilized/reconstituted at -20°C; once reconstituted make aliquots to avoid repeated freeze-thaw cycles. Please remember to spin the tubes briefly prior to opening them to avoid any losses that might occur from material adhering to the cap or sides of the tube.

**Additional information** | Peptide target used to elicit this antibody is well conserved in all photoautotrophs except some cyanobacteria, some red algae and *Cyanophora paradoxa*, which contain a conserved substitution of a valine to an isoleucine. The performance of the antibodies has been confirmed against taxa containing both the valine and isoleucine variants.

**Example of a simultaneous western blot detection with RbcL, PsbA and PsaC antibodies.**

More information about quantitative western blot using PsaC antibody can be found [here](#).

**Application information**

**Recommended dilution** | 1 : 5000 (WB)

**Expected | apparent MW** | 9 kDa

**Confirmed reactivity** | *Arabidopsis thaliana*, *Chlamydomonas reinhardtii*, *Cyanophora paradoxa*, *Dactylis glomerata*, *Emiliania huxleyi*, *Euglena gracilis*, *Gonyaulax polyedra*, *Hordeum vulgare*, *Mesembryanthemum sp.*, *Spinacia oleracea*, *Flaveria sp.*, *Heterosigma akashiwo*, *Micromonas pusilla*, *Phaeodactylum tricornutum*, *Porphyras sp.*, *symbiotic dinoflagellates of Stylophora pistillata and Turbinaria reniformis*; *Synechococcus sp.* PCC7002, *sp.* PCC 7942, *Synechocystis sp.* PCC 6803, *Thalassiosira pseudonana*, *Thalassiosira punctigera*, *Trichodesmium erythraeum*, *Triticum aestivum*

**Predicted reactivity** | Algae, *Cannabis sativa*, *Chromera velia*, *Cyanobacteria*, *Brassica napus*, *Glycine max*, *Manihot esculenta*, *Nannochloropsis sp.*, *Nicotiana benthamiana*, *Nicotiana tabacum*, *Physcomitrium patens*, *Prochlorococcus sp.* (surface and a deep water ecotype), *Spinacia oleracea*, *Synechococcus* PCC 8801, *Thermosynechococcus elongatus* (BP-1)

Species of your interest not listed? [Contact us](#)

**Not reactive in** | No confirmed exceptions from predicted reactivity are currently known

**Additional information** | In some species minor cross reactions with some larger proteins are seen. These may contain related iron-sulfur binding motifs. Therefore size verification of the reacting band is required. Due to the small size of the protein, care should be taken to differentiate between chemiluminescent signal from PsaC and non-specific signals from chlorophylls or lipids if pigment is retained near the bottom of the blot.

For the most optimal results use: thylakoid membranes or PSI particles, solubilized in a SDS sample buffer (final concentrations: 63 mM Tris HCl, 10% glycerol, 2% SDS, 0.0025% bromophenol blue) with 2.5% beta-mercaptoethanol at 85°C for 2 minutes. The samples were spun softly, then the supernatant loaded.

This product can be sold containing ProClin if requested.

**Selected references** | [Rredji et al. \(2023\)](#). The UV-A Receptor CRY-DASH1 Up- and Downregulates Proteins Involved in Different Plastidial Pathways. *J Mol Biol.* 2023 Sep 10:168271. doi: 10.1016/j.jmb.2023.168271.

[Burlacot et al. \(2022\)](#) Alternative photosynthesis pathways drive the algal CO<sub>2</sub>-concentrating mechanism. *Nature* 605, 366–371 (2022). <https://doi.org/10.1038/s41586-022-04662-9>

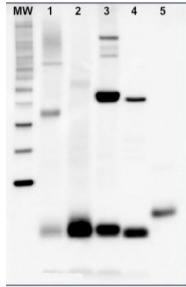
[Ye et al. \(2022\)](#) Effect of increased CO<sub>2</sub> on iron-light-CO<sub>2</sub> co-limitation of growth in a marine diatom, ASLO, *Limnol. Oceanogr.* 2022, 172-176

[Rogowski et al. \(2021\)](#) Light as a substrate: migration of LHCII antennas in extended Michaelis-Menten model for PSI kinetics. *J Photochem Photobiol B.* 2021 Dec;225:112336. doi: 10.1016/j.jphotobiol.2021.112336. Epub 2021 Oct 19. PMID: 34736069.

[Levitan et al. \(2019\)](#). Structural and functional analyses of photosystem II in the marine diatom *Phaeodactylum tricornutum*. *Proc Natl Acad Sci U S A.* 2019 Aug 27;116(35):17316-17322. doi: 10.1073/pnas.1906726116.

Zavrel et al. (2019). Quantitative insights into the cyanobacterial cell economy. *Elife*. 2019 Feb 4;8. pii: e42508. doi: 10.7554/eLife.42508.

## Application example



5 µg of total protein from samples such as **(1)** *Arabidopsis thaliana* leaf, **(2)** *Hordeum vulgare* leaf, **(3)** *Chlamydomonas reinhardtii* total cell, **(4)** *Synechococcus* sp. 7942 total cell, **(5)** PsaC protein standard ([AS04\\_042S](#)), total protein from all the samples were extracted with Agrisera Protein Extraction Buffer PEB ([AS08\\_300](#)). Samples were diluted with 1X sample buffer (NuPAGE LDS sample buffer (Invitrogen) supplemented with 50 mM DTT and heat at 70 °C for 5 min and kept on ice before loading. Protein samples were separated on NuPAGE 4-12% Tris-Bis gel (Invitrogen) LDS-PAGE and blotted for 1h to 1.5h on PVDF using tank transfer. Blots were blocked immediately following transfer in 2% blocking reagent for 1h at RT with agitation. Blots were incubated with PsaC antibody at a dilution of 1: 10 000 (in blocking reagent) for 1h at RT with agitation. The antibody solution was decanted and the blot was rinsed briefly twice, and then washed 1x15 min and 3x5 min with TBS-T at RT with agitation. Blots were incubated in secondary antibody (anti-rabbit IgG HRP conjugated, [AS09\\_602](#)) diluted to 1:50 000 in blocking reagent for 1h at RT with agitation. The blots were washed as above. The blot was developed for 5 min with chemiluminescence detection reagent in mid picogram range. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad).